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APPLICATION NO. 10/002,978	FILING DATE 12/06/2001	FIRST NAMED INVENTOR Jung-Yu Hsieh	ATTORNEY DOCKET NO. 4425-224	CONFIRMATION NO. 4986
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7590 06/04/2002
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EXAMINER

LE, THAO X

ART UNIT 2814	PAPER NUMBER
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DATE MAILED: 06/04/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/002,978

Examiner

Thao X Le

Applicant(s)

HSIEH ET AL.

Art Unit

2814

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-19 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-19 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on ____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. ____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) ____.

- 4) ☐ Interview Summary (PTO-413) Paper No(s). ____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other:

DETAILED ACTION

Drawings

1. The drawings are objected to as failing to comply with 37 CFR 1.84(p)(5) because they do not include the following reference sign(s) mentioned in the description: 212 and 206. A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

- (e) the invention was described in-
 - (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effect under this subsection of a national application published under section 122(b) only if the international application designating the United States was published under Article 21(2)(a) of such treaty in the English language; or
 - (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that a patent shall not be deemed filed in the United States for the purposes of this subsection based on the filing of an international application filed under the treaty defined in section 351(a).
3. Claims 1-19 are rejected under 35 U.S.C. 102(e) as being anticipated by US Patent 6,163,050 Hisatomi et al.

Regarding to claim 1, Hisatomi discloses a method for forming an oxide-nitride-oxide structure fig. 2 in one chamber, the method comprising the steps of: providing a substrate 33, column 6 line 35, forming a first oxide layer 36-1, column 6 line 44, on first oxide layer, forming a first buffer layer 36-4, column 7 line 38, on first oxide layer, forming a silicon nitride layer 36-2, column 6 line 50, on first buffer layer, forming a second

Application/Control Number: 10/002,978
Art Unit: 2814

buffer layer 36-5, column 7 line 41, on silicon nitride, and forming a second oxide layer 36-3, column 6 line 56, on second buffer layer.

Regarding to claim 2, 8, 12, 18, Hisatomi discloses a method for forming an oxide-nitride-oxide structure wherein first and second oxide layers are formed by introducing silane gas and nitrogen oxide gas, column 6 line lines 40-41.

Regarding to claim 3, 4, 6, 7, 13, 14, 16, 17, Hisatomi discloses a method for forming an oxide-nitride-oxide structure wherein first and second buffer layer is silicon oxynitride (SiON) layer, column 7 line 38, by introducing silane, nitrogen oxide and ammonia gas, column 7 line 36-37.

Regarding to claim 5, 8, 15, Hisatomi discloses a method for forming an oxide-nitride-oxide structure wherein silicon nitride layer is formed by introducing silane and ammonia, column 6 lines 45-46

Regarding to claim 9, Hisatomi discloses a method for forming an oxide-nitride-oxide structure is formed in one wafer, because silicon substrate, column 6 line 35, is inherently a wafer.

Regarding to claim 10, Hisatomi discloses a method for forming an oxide-nitride-oxide structure fig. 2 in one chamber, the method comprising the steps of: providing a substrate 33, column 6 line 35, forming a first oxide layer 36-1, column 6 line 44, on substrate, forming a first buffer layer 36-4, column 7 line 38, on first oxide layer, forming a silicon nitride layer 36-2, column 6 line 50, on first buffer layer, forming a second buffer layer 36-5, column 7 line 41, on silicon nitride, and forming a second oxide layer 36-3, column 6 line 56, on second buffer layer, wherein above-mention layer is formed in

Application/Control Number: 10/002,978
Art Unit: 2814

one chamber and one wafer, because inherent continuous process, column 6 line 45, 57
column 7 line 36.

Regarding to claim 11, Hisatomi discloses a method for forming an ONO
structure is formed by low-pressure chemical vapor deposition (LPLVD) method, column
6 line 37.

Regarding to claim 19, as discussed above claims 1-18, Hisatomi discloses all the
limitations in claimed 19.

Conclusion

4. The prior art made of record and not relied upon is considered pertinent to applicant's
disclosure:

- a) US Patent 6,358,864 to Chang et al.
- b) US Patent 5,714,399 to Hisatomi et al.
- c) US Pub 2002/0006706 to Nishida et al.
- d) US Pub 2002/0048969 to Suzuki et al.

5. Any inquiry concerning this communication or earlier communications from the
examiner should be directed to Thao X Le whose telephone number is 703-306-0208. The
examiner can normally be reached on M-F from 8:00 AM - 4:30 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's
supervisor, Olik Chaudhuri can be reached on 703-306-2794. The fax phone numbers for the
organization where this application or proceeding is assigned are 703-308-7722 for regular
communications and 703-308-7722 for After Final communications.

Application/Control Number: 10/002,978
Art Unit: 2814

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0956.

Thao X. Le
May 17, 2002


PHAT X. CAO
PRIMARY EXAMINER